

Academic Resume



Osama Abulnaja

Professor, Computer Science Department

Contact Information.

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Highest Degree.

1996, Ph.D, Computer Science, University of Wisconsin, USA.

Academic and Professional Experiences.

1. **2020 - Present**
Chairman of Permanent Committee for Scientific Promotion, University of Jeddah, Saudi Arabia.
2. **2020 - 2023**
Member of the Board of Trustees, King Abdulaziz University, Saudi Arabia.
3. **2019 - 2020**
Member of Permanent Committee for Scientific Promotion, University of Jeddah, Saudi Arabia.
4. **2017 - Present**
Member of Scientific Council, University of Jeddah, Saudi Arabia.
5. **2014 - 2019**
General Supervisor, Saudi Electronic University, Jeddah Branch, Saudi Arabia.
6. **2012 - 2016**
Member of Scientific Council, King Abdulaziz University, Saudi Arabia.
7. **2012 - 2013**
Interim Chief Executive Officer, King Fahad Public Library, Saudi Arabia.
8. **2010 - 2011**
Member of Scientific Council, Princess Nora Bint Abdul Rahman University, Saudi Arabia.
9. **2010 - 2011**
Chairman of Permanent Committee for Scientific Promotion, Princess Nora Bint Abdul Rahman University, Saudi Arabia.
10. **2009 - 2011**
Chief Information Officer, Princess Nora Bint Abdul Rahman University, Saudi Arabia.
11. **2009 - 2011**
Founder Dean, Faculty of Computer and Information Sciences, Princess Nora Bint Abdul Rahman University, Saudi Arabia.
12. **2008 - 2009**
Member of Permanent Committee for Scientific Council Affairs, King Abdulaziz University, Saudi Arabia.
13. **2007 - Present**
Professor, Department of Computer Science, King Abdulaziz University, Saudi Arabia.

Academic and Professional Experiences.

14. **2003 - 2009**
Associate Dean for Development, Deanship of Library Affairs, King Abdulaziz University, Saudi Arabia.
15. **2001 - 2007**
Associate Professor, Department of Computer Science, King Abdulaziz University, Saudi Arabia.
16. **1996 - 2001**
Assistant Professor, Department of Computer Science, King Abdulaziz University, Saudi Arabia.
17. **1986 - 1987**
Teaching Assistant, Department of Computer Science, King Abdulaziz University, Saudi Arabia.

Research Interests.

High Performance Computing, Fault Tolerance, Systems Programming, Software Engineering.

Teaching Interests.

Fault-Tolerant Computing, Theory of Computation, Systems Programming, Assembly Language Programming, Discrete Mathematics, Research Project.

Certifications and Trainings.

Social, Scientific and Professional Affiliation.

1. 1986-Present, Professor, King Abdulaziz University.
2. 2009-2011, Dean of Faculty of Computer and Information Sciences, Princess Nora Bint Abdul Rahman University.
3. 2012-2013, Interim Chief Executive Officer, King Fahad Public Library - Jeddah.
4. 2014-2019, General Supervisor, Jeddah Branch, Saudi Electronic University.

Funded Projects.

1. 1998, Object-Oriented Testing, King Abdulaziz University
2. 2000, UML-Based Tools for Component-Based Software Development, King Abdulaziz University
3. 2007, Agent-Based Web Services Information Gathering System, King Abdulaziz University
4. 2012, Exploring Techniques for Exascale Computing Applications, King Abdulaziz University

Publications.

1. Arwa Fadel, Mostafa Saleh, Reda Salama, Osama Abulnaja, "Mtl-Arabert: An Enhanced Multi-Task Learning Model For Arabic Aspect-Based Sentiment Analysis", Computers, vol: 13, pp. 98, 2024.
DOI: [10.3390/computers13040098](https://doi.org/10.3390/computers13040098)
2. Fares Jammal, Naif Aljabri, Muhammad Al-Hashimi, Mostafa Saleh, Osama Abulnaja, "A Preliminary Empirical Study Of The Power Efficiency Of Matrix Multiplication", Electronics, vol: 12, pp. 1599, 2023.
DOI: [10.3390/electronics12071599](https://doi.org/10.3390/electronics12071599)
3. Fatima Jafar Muhdher, Osama Ahmed Abulnaja, Fatmah Abdulrahman Baothman, "Investigating The Cultural Impact On Predicting Crowd Behavior", Computers, vol: 12, pp. 108, 2023.
DOI: [10.3390/computers12050108](https://doi.org/10.3390/computers12050108)
4. Arwa Saif Fadel, Osama Ahmed Abulnaja, Mostafa Elsayed Saleh, "Multi-Task Learning Model With Data Augmentation For Arabic Aspect-Based Sentiment Analysis", Computers, Materials & Continua, vol: 75, pp. 4419-4444, 2023.
DOI: [10.32604/cmc.2023.037112](https://doi.org/10.32604/cmc.2023.037112)
5. Muhammad Jawad Ikram, Mostafa Elsayed Saleh, Muhammad Abdulhamid Al-Hashimi, Osama Ahmed Abulnaja, "Investigating The Effect Of Varying Block Size On Power And Energy Consumption Of Gpu Kernels", The Journal Of Supercomputing, vol: 78, pp. 14919-14939, 2022.
DOI: [10.1007/s11227-022-04473-9](https://doi.org/10.1007/s11227-022-04473-9)
6. Arwa Saif Fadel, Mostafa Elsayed Saleh, Osama Ahmed Abulnaja, "Arabic Aspect Extraction Based On Stacked Contextualized Embedding With Deep Learning", Ieee Access, vol: 10, pp. 30526-30535, 2022.
DOI: [10.1109/ACCESS.2022.3159252](https://doi.org/10.1109/ACCESS.2022.3159252)
7. Fatmah Abdulrahman Baothman, Osama Ahmed Abulnaja, Fatima Jafar Muhdher, "A Novel Cultural Crowd Model Toward Cognitive Artificial Intelligence", Computers, Materials & Continua, vol: 69, pp. 3337-3363, 2021.
DOI: [10.32604/cmc.2021.017637](https://doi.org/10.32604/cmc.2021.017637)
8. Naif Aljabri, Muhammad Al-Hashimi, Mostafa Saleh, Osama Abulnaja, "Investigating Power Efficiency Of Mergesort", The Journal Of Supercomputing, vol: 75, pp. 6277-6302, 2019.
DOI: [10.1007/s11227-019-02850-5](https://doi.org/10.1007/s11227-019-02850-5)
9. Naif Aljabri and Osama Abulnaja Naif Aljabri and Osama Abulnaja, "Build Power Profiling Tool For Modern Cpus", Journal Of King Abdulaziz University Computing And Information Technology Sciences, vol: 8, pp. 11-18, 2019.
DOI: [10.4197/Comp.8-1.2](https://doi.org/10.4197/Comp.8-1.2)
10. Osama Ahmed Abulnaja, Muhammad Jawad Ikram, Muhammad Abdulhamid Al-Hashimi, Mostafa Elsayed Saleh, "Analyzing Power And Energy Efficiency Of Bitonic Mergesort Based On Performance Evaluation", Ieee Access, vol: 6, pp. 42757-42774, 2018.
DOI: [10.1109/ACCESS.2018.2861571](https://doi.org/10.1109/ACCESS.2018.2861571)
11. M. Al-Hashimi, M. Saleh, O. Abulnaja, N. Aljabri, "On The Power Characteristics Of Mergesort: An Empirical Study", 5th Ieee International Conf. Advanced Control Circuits Systems (Accs) And 4th Ieee International Conf. New Paradigms In Electronics And Information Technology (Peit), Alexandria, Egypt, November 5 - 8, Pp. 172 - 178, 2017.
12. M. Ikram, O. Abulnaja, M. Saleh, M. Al-Hashimi, "Measuring Power And Energy Consumption Of Programs Running On Kepler Gpus", 5th Ieee International Conf. Advanced Control Circuits Systems (Accs) And 4th Ieee International Conf. New Paradigms In Electronics And Information Technology (Peit), Alexandria, Egypt, November 5 - 8, Pp. 18 - 25, 2017.
13. S. Alowaidi, M. Saleh, O. Abulnaja, "Semantic Sentiment Analysis Of Arabic Texts", International Journal Of Advanced Computer Science And Applications, Vol. 8, No. 2, February, Pp. 256 - 262, 2017.

Publications.

14. Muhammad Abdulhamid Al-Hashimi, Osama Ahmed Abulnaja, Mostafa Elsayed Saleh, Muhammad Jawad Ikram, "Evaluating Power And Energy Efficiency Of Bitonic Mergesort On Graphics Processing Unit", Ieee Access, vol: 5, pp. 16429-16440, 2017.
DOI: [10.1109/ACCESS.2017.2736525](https://doi.org/10.1109/ACCESS.2017.2736525)
15. M. Al-Hashimi, M. Saleh, O. Abulnaja, N. Aljabri, "Evaluation Of Control Loop Statements Power Efficiency: An Experimental Study", 9th Ieee International Conf. Informatics And Systems, Cairo, Egypt, December 15 - 17, pp. PDC-45-PDC-48, 2014.
DOI: [10.1109/INFOS.2014.7036676](https://doi.org/10.1109/INFOS.2014.7036676)
16. O. A. Abulnaja, Y. A. Batawi, "Improving Arabic Optical Character Recognition Accuracy Using N-Version Programming Technique", Canadian Journal On Image Processing And Computer Vision, Vol. 3, No. 2, June, Pp. 44 - 46, 2012.
17. Y. A. Batawi, O. A. Abulnaja, "Accuracy Evaluation Of Arabic Optical Character Recognition Voting Technique: Experimental Study", International Journal Of Electrical & Computer Sciences Ijecs-Ijens, vol: 12, no. 01, pp. 29-33, 2012.
18. O. A. Abulnaja, N. M. Saadi, "Performance Evaluation Of Integrated Fault-Tolerant Technique: Simulation Study", Icgst International Journal On Artificial Intelligence And Machine Learning, vol: 2, pp. 7-18, 2005.
19. O. A. Abulnaja, "Component-Based Recovery Block Technique", Icgst International Journal On Artificial Intelligence And Machine Learning, vol: 2, pp. 1-5, 2005.
20. O. A. Abulnaja, N. M. Saadi, "Evaluating The Effect Of Ift Scheme On System Performance Via Priority Scheduling Algorithm Simulation", Minufiya Journal Of Electronic Engineering Research, Faculty Of Electronic Engineering, Minufiya University, vol: 14, no. 1 & 2, pp. 65-91, 2004.
21. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Scheduling Algorithms For Ultra-Reliable Execution Of Tasks Under Both Hardware And Software Faults", Acs/Ieee International Conf. Computer Systems And Applications, Tunis, Tunisia, July 14 - 18, 2003.
22. F. E. Eassa, O. A. Abulnaja, "A Software Sub-Tool For Analyzing Component Based Applications", Al Azhar University Engineering Journal, Faculty Of Engineering, Vol. 6, No. 1, January, Pp. 83 - 92, vol: 6, no. 1, pp. 83-92, 2003.
23. O. A. Abulnaja, "Reliability Evaluation Of A Task Under An Integrated Fault-Tolerant Technique", Acis International Conf. Computer Science, Software Engineering, Information Technology, E-Business, And Applications, Foz Do Iguazu, Brazil, June 6 - 8, Pp. 299 - 304, 2002.
24. O. A. Abulnaja, "An Analytical Reliability Model For Hft Technique", Minufiya Journal Of Electronic Engineering Research, Faculty Of Electronic Engineering, Vol. 12, No. 1, January, Pp. 113 - 131, vol: 12, pp. 113-131, 2002.
25. F. E. Eassa, O. A. Abulnaja, "Building A New Use Case Sub-Tool For Component-Based Software Development", Minufiya Journal Of Electronic Engineering Research, Faculty Of Electronic Engineering, Vol. 12, No. 1, January, Pp. 55 - 66, vol: 12, pp. 55-66, 2002.
26. O. A. Abulnaja, "Improving N-Version Programming Technique Reliability Through Component-Based Software," International Journal Of Intelligent Computing & Information Science, vol: 2, pp. 42-49, 2002.
27. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Integrated Fault-Tolerant Scheduling Algorithms", 11th International Conf. Computer Theory And Applications, Egypt, August 28 - 30, Pp. Vii.9 - Vii.26, pp. 9-26, 2001.
28. F. E. Eassa, O. A. Abulnaja, "Building Uml-Based Use Case Sub-Tool For Component-Based Software Development", Acs/Ieee International Conf. Computer Systems And Applications, Beirut, Lebanon, June 25 - 29, Pp. 454 - 456, pp. 454-456, 2001.
29. O. A. Abulnaja, F. E. Eassa, "Building An Analysis Sub-Tool For Component-Based Software Development", Administrative Research Review, Research Center, Sadat Academy For Management Sciences, vol: 13, no. 4, pp. 59-71, 2001.

Publications.

30. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Scheduling Algorithms For A Hardware Fault-Tolerant Technique", Al Azhar University Engineering Journal, vol: 9, pp. 337-347, 2000.
31. I. Onyuksel, O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Fault-Tolerant Hardware And Software Co-Design And Performance Evaluation", Scs Symp. Performance Evaluation Of Computer And Telecommunication Systems, Chicago, Illinois, July 11 - 15, Pp. 73 - 77, 1999.
32. O. A. Abulnaja, "Reliability Modeling Of Hardware Fault-Tolerant Technique", Al Azhar University Engineering Journal, Faculty Of Engineering, Vol. 2, No. 4, Pp. 237 - 250, 1999.
33. O. A. Abulnaja, F. E. Eassa, "Dynamic Tester For Object-Oriented Systems", Al Azhar University Engineering Journal, vol: 2, no. 3, pp. 180-186, 1999.
34. F. E. Eassa, O. A. Abulnaja, "A Practical Object-Oriented Systems Testing With Assertion Language", Al Azhar University Engineering Journal, Faculty Of Engineering, Al Azhar University, Vol. 2, No. 2, April 1999, vol: 2, no. 2, pp. 101-116, 1999.
35. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "On-Line System-Level Fault Diagnosis Scheduling Algorithms", 9th International Conf. Computer Theory And Applications, Alexandria, Egypt, August 28 - 30, Pp. 225 - 231, pp. 225-231, 1999.
36. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "High Performance Technique For Ultrareliable Execution Of Tasks Under Both Hardware And Software Faults", Asia-Pacific Software Engineering Conference, Taipei, Taiwan, December 1 - 4, Pp. 154 - 163, 1998.
37. F. E. Eassa, O. A. Abulnaja, "An Assertion Language For Object-Oriented Systems Testing", 8th International Conf. Computer Theory And Applications, Alexandria, Egypt, September 15 - 17, Pp. Viii.18 - Viii.21, 1998.
38. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Reliability Evaluation Of A Task Under A Hardware Fault-Tolerant Technique", 1998.
39. O. A. Abulnaja, "Reliability Evaluation Of The N-Modular Redundancy Technique", 8th International Conf. Computer Theory And Applications, Alexandria, Egypt, September 15 - 17, pp. 17-20, 1998.
40. O. A. Abulnaja, S. H. Hosseini, I. Onyuksel, K. Vairavan, "Reliable Execution Of Tasks Under Both Hardware And Software Faults", Scs Symp. Performance Evaluation Of Computer And Telecommunication Systems, Reno, Nevada, July 19 - 22, pp. 268-272, 1998.
41. O. A. Abulnaja, "Reliability Estimation Of Hardware Fault-Tolerant Techniques: Comparison Study", pp. 34-49, 1998.
42. S. H. Hosseini, O. A. Abulnaja, K. Vairavan, "An Efficient Hardware Fault-Tolerant Technique", Fault-Tolerant Parallel And Distributed Systems, D. R. Avresky And D. R. Kaeli, Eds. Kluwer Academic Publisher, pp. 301-314, 1998.
43. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Scheduling Algorithms For Reliable Execution Of Tasks Under Hardware Faults", 7th International Conf. Computer Theory And Applications, Alexandria, Egypt, September 2 - 4, Pp. 11.1 - 11.6, 1997.
44. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Hardware Fault-Tolerant Scheduling Algorithms", 15th National Computer Conference, Dhahran, Saudi Arabia, November 17 - 19, pp. 647-664, 1997.
45. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "On The Effect Of Recovery Block Scheme On System Performance", 21st Ieee Ann. International Computer Software And Applications Conference, Washington, Dc, August 13 - 15, pp. 76-81, 1997.
46. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Scheduling Algorithms For N-Version Programming Scheme", 20th Ieee Ann. International Computer Software And Applications Conference, Seoul, Korea, August 21 - 23, Pp. 184 - 189, 1996.
47. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Scheduling Algorithms For Recovery Block Scheme", Iasted International Conf. Modelling And Simulation, Pittsburgh, Pennsylvania, April 25 - 27, pp. 94-97, 1996.

Publications.

48. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Software Fault-Tolerant Scheduling Algorithms", Scs High Performance Computing Symp., New Orleans, Louisiana, April 8 - 11, pp. 220-225, 1996.
49. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Performability Evaluation Of The Recovery Block Scheme", Iasted International Conf. Applied Modelling, Simulation, And Optimization, Cancun, Mexico, June 15 - 17, pp. 67-70, 1995.
50. O. A. Abulnaja, S. H. Hosseini, K. Vairavan, "Evaluating Performability Of A System Under N-Version Programming Scheme", Iasted International Conf. Modelling And Simulation, Pittsburgh, Pennsylvania, April 27 - 29, pp. 127-129, 1995.